

Weed Management in Onions

New York 2016

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Complete weed control for the whole season is critical for successful onion production. Weed competition before the 2 leaf stage (LS) may thin stands and reduce yields. Onions are sensitive to herbicides up to the 2 LS, so an effective weed control plan is needed to maintain control without injuring onions. The weed control methods used need to control all weeds under all conditions and stay within herbicide label limitations.

On muck (high organic) soil, Prowl H2O may be applied preemergence at 2 qt (1.9 lb ai)/acre, and again after the onion 2 LS. A final application may be made at 45 days before harvest (preharvest interval; PHI). Buctril normally is applied preemergence with Prowl H2O just before onion emergence, to kill emerged broadleaf (BL) weeds. By delaying the first preemergence application until just before onion emergence, the interplanted barley has more time to germinate and emerge, resulting in a better stand. The delayed Prowl H2O preemergence application also results in extending the effective preemergence weed control activity to the 2 LS. Dual Magnum may be applied twice after the onion 2 LS, normally in sequence with Prowl H2O. (Dual Magnum is an indemnified 24c label.) Outlook may be applied once after the 2 LS. It often is applied as the final preemergence application, with a 30 day PHI.

Chateau may be applied after the 3 LS, with 1 or 2 oz product (0.032-0.064 lb ai)/acre in 2 applications, for a seasonal total of 3 oz. Chateau provides added preemergence control of several broadleaves, including common lambsquarters, common groundsel, mustards, and nightshades. It should be applied alone or in tank mix with Prowl H2O, because of potential onion injury when applied with an EC formulation of another pesticide.

GoalTender may be applied postemergence at the onion 1 LS in Michigan (MI 24c label), at 2-6 fl oz (0.063-0.188 lb ai)/acre. Normal applications should not exceed 4 fl oz/acre. When GoalTender is applied postemergence at the 1 LS at 2-4 fl oz, most small seedling broadleaves will be killed, including ladythumb. If the first application is made at the 2 LS, some ladythumb and other weeds will survive and become competitors to onions. A total of 16 fl oz of GoalTender may be applied per year.

Our recent onion research is directed at registering Zidua (pyroxasulfone) and bicyclopyrone for use on onions. Zidua is chemically different from Dual Magnum, but has the same mode of action (germination inhibitor). It is too toxic for preemergence use on onion, but is safe after the onion 2 LS. We hope to have a label (in 2-3 years) for Zidua at 2.5 oz product (0.133 lb ai)/acre at the onion 2 LS, and again 3-4 weeks later. It controls most annual grasses and broadleaves; it is weak on common lambsquarters.

Bicyclopyrone (BIR) is an HPPD inhibitor that is active against several annual grasses and broadleaves. It has been safe preemergence and postemergence on onion on muck soil. If it is labeled on onion, it will be used in tank mix or in sequence with other herbicides. The residual activity is relatively short.